

MERCER

Investment Consulting

August 17, 2007

Total Fund Review – Second Quarter Board Meeting

Arizona State Retirement System

Terry A. Dennison

Los Angeles



Marsh & McLennan Companies



Economic Environment

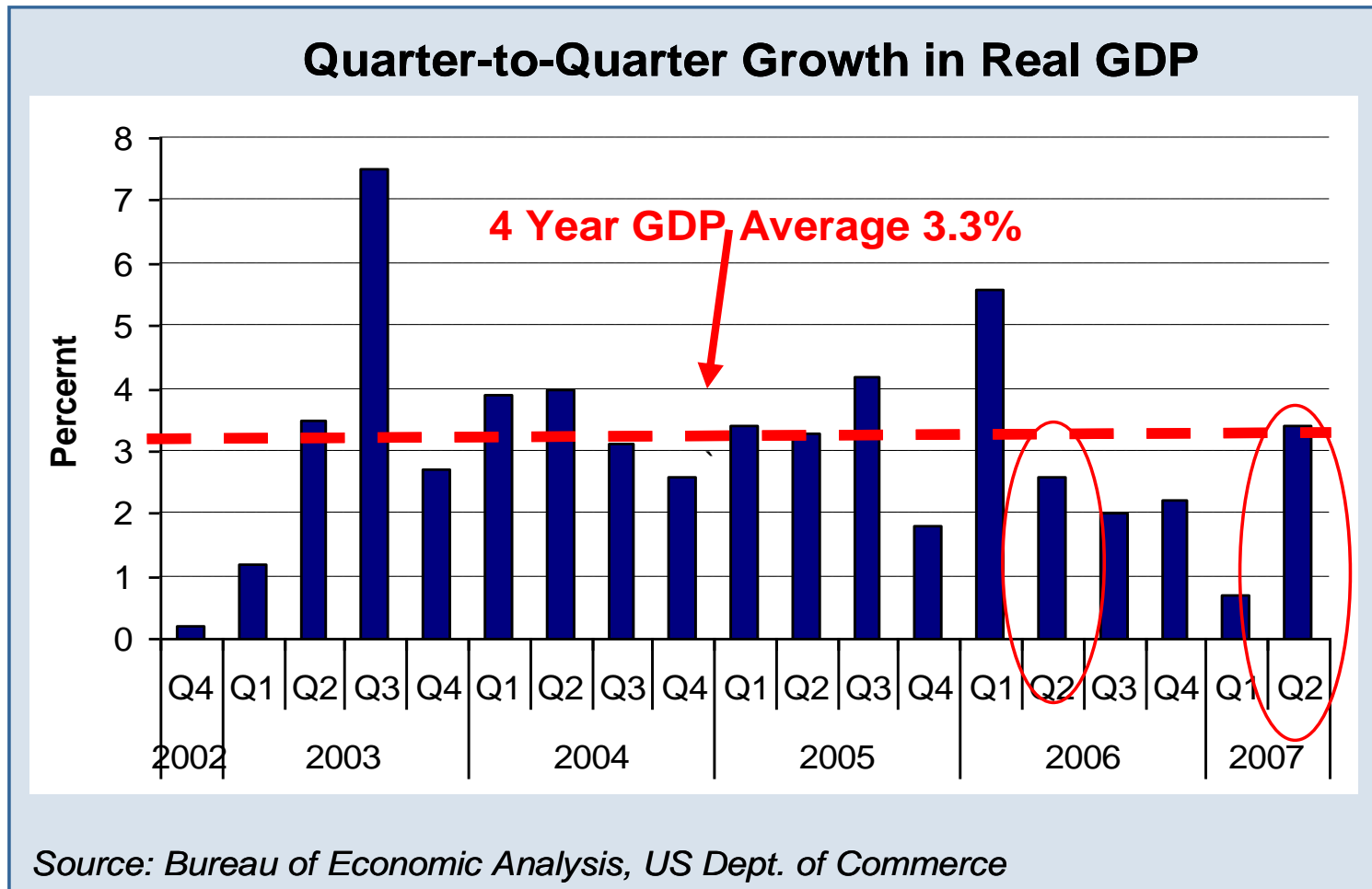
Economic Growth Picked Up

Strong Job Market Keeps the Economy Going

- GDP came in at 3.4% for the second quarter of 2007, resurging from the first quarter's disappointment. It was the strongest GDP since Q2 2006.
- Many economists believe that the strong job market, driven by the service industries, is keeping the overall U.S. economy in good shape, despite the many obstacles over the last few years.
- The U.S. employment rate remained unchanged at 4.5%. Unemployment claims have also remained low.
- During the quarter, longer-term rates rose, while short-term yields fell, causing the Treasury yield curve to shift patterns from inverted to upward sloping.

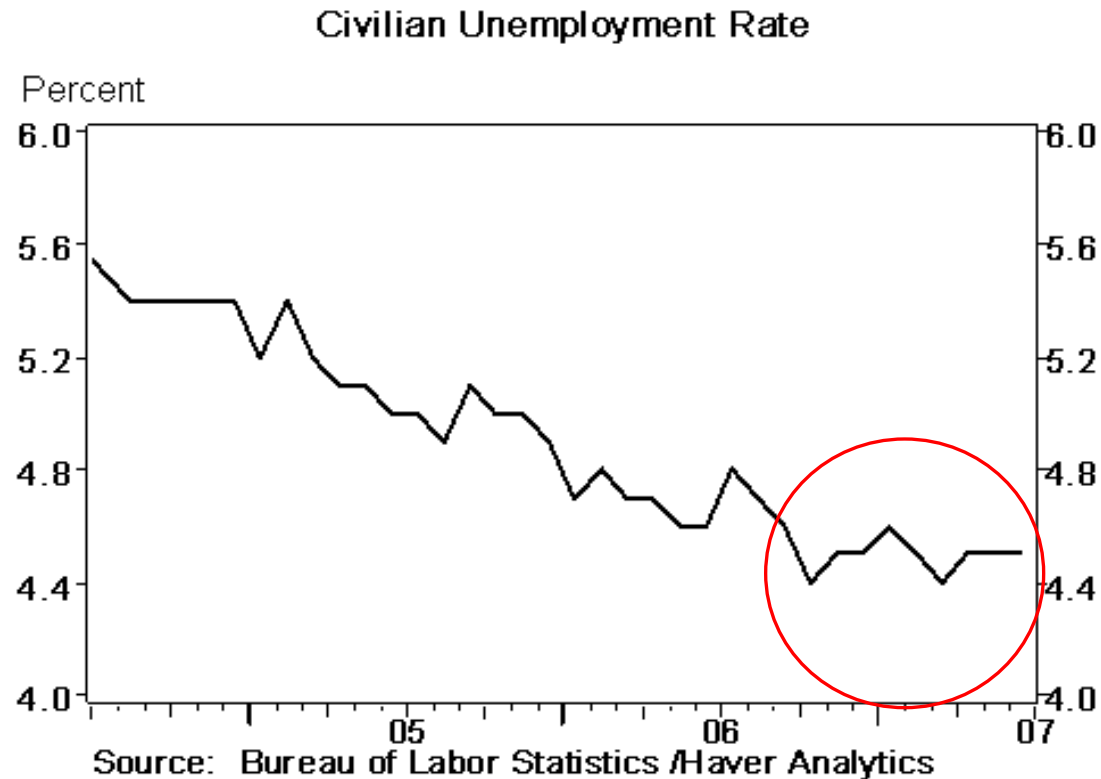
Economic Resurgence

Strength in Manufacturing Sector and Services,
Particularly Financial Services



Unemployment Rate

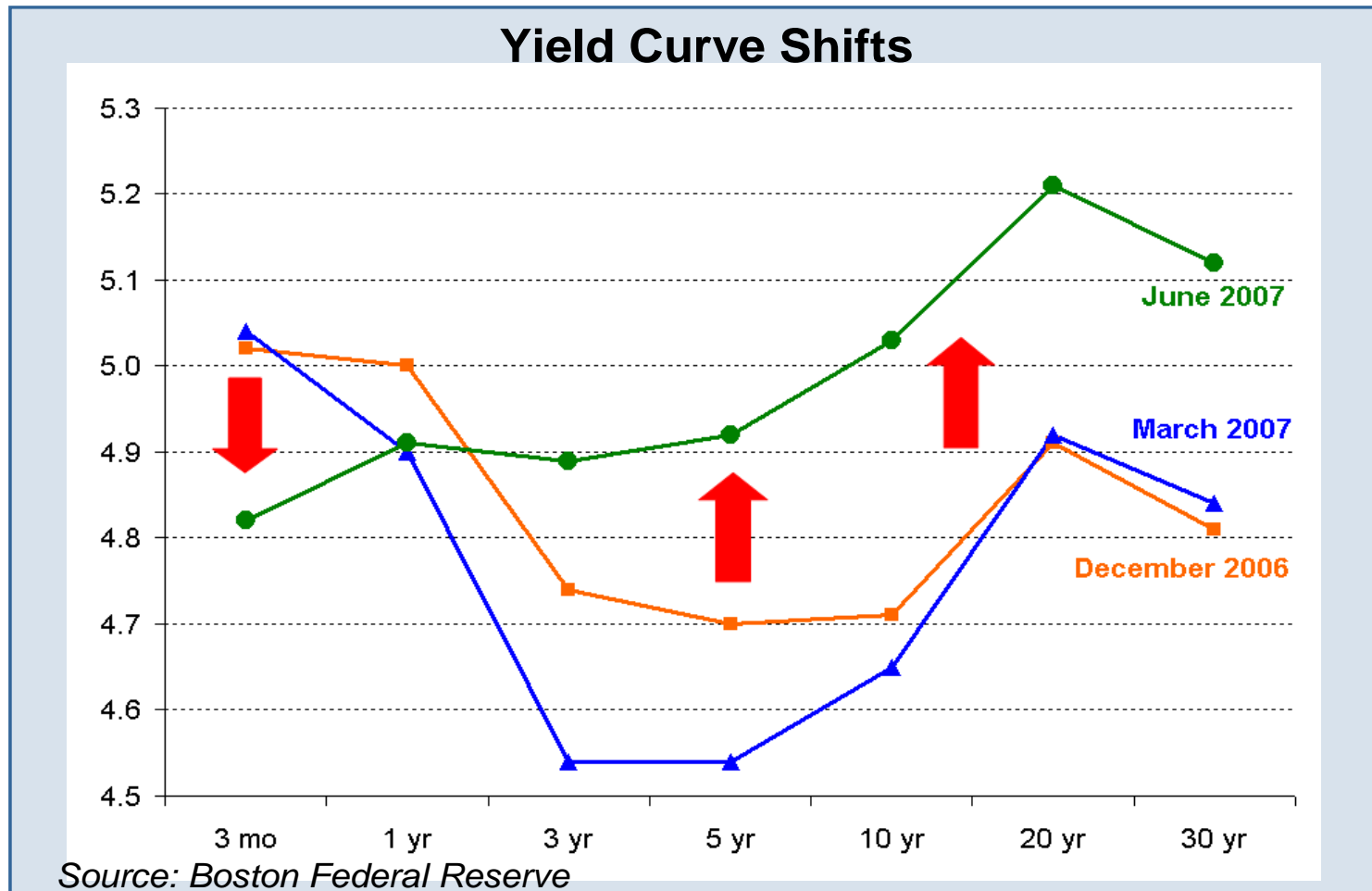
At Nearly a Six-Year Low



Last updated 7/6

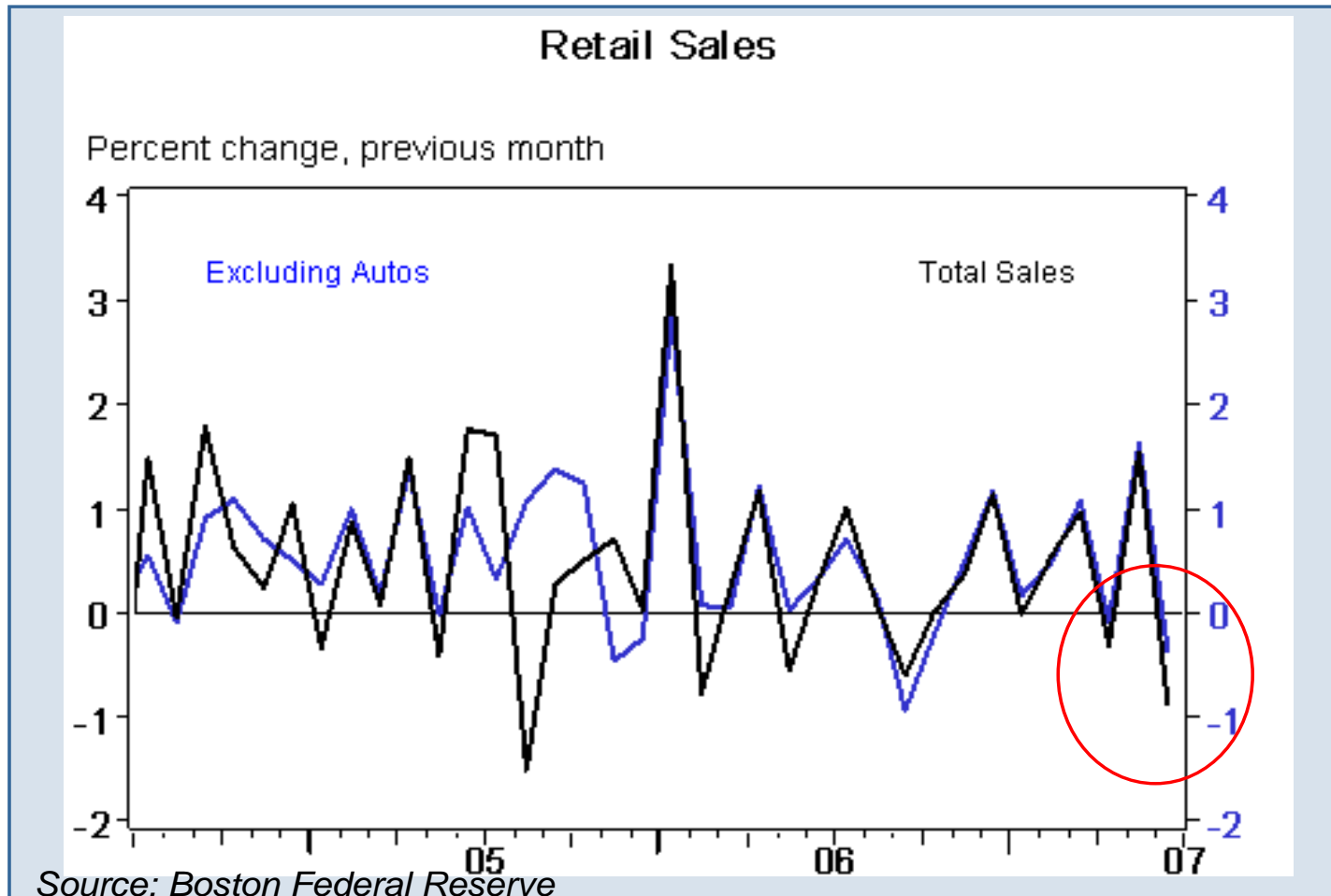
Source: *Boston Federal Reserve*

Long-Term Yields Rose During the Quarter Back to an Upward-Sloping Yield Curve



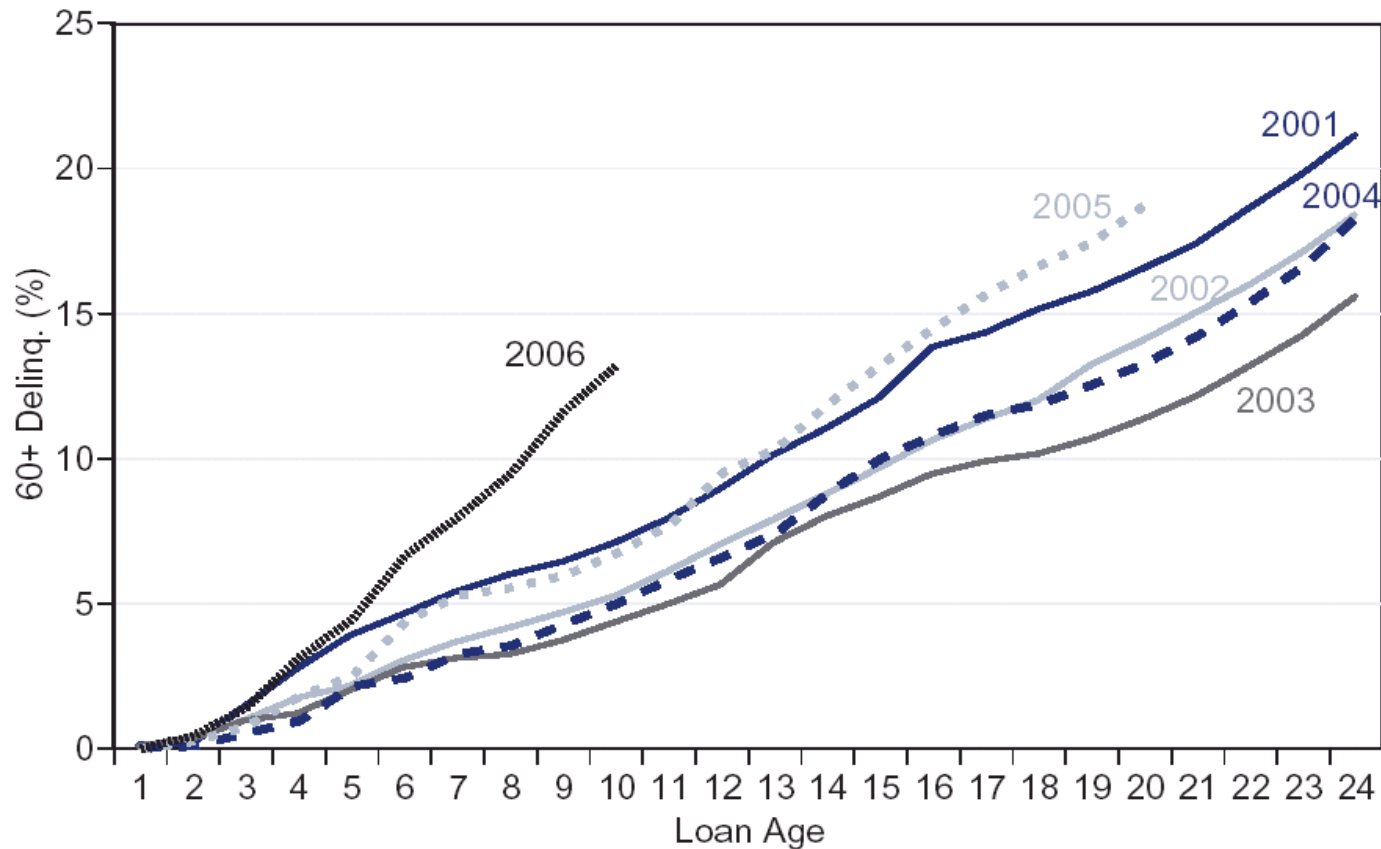
Retail Sales Are Trending Down

Housing Decline Impacts Retailers



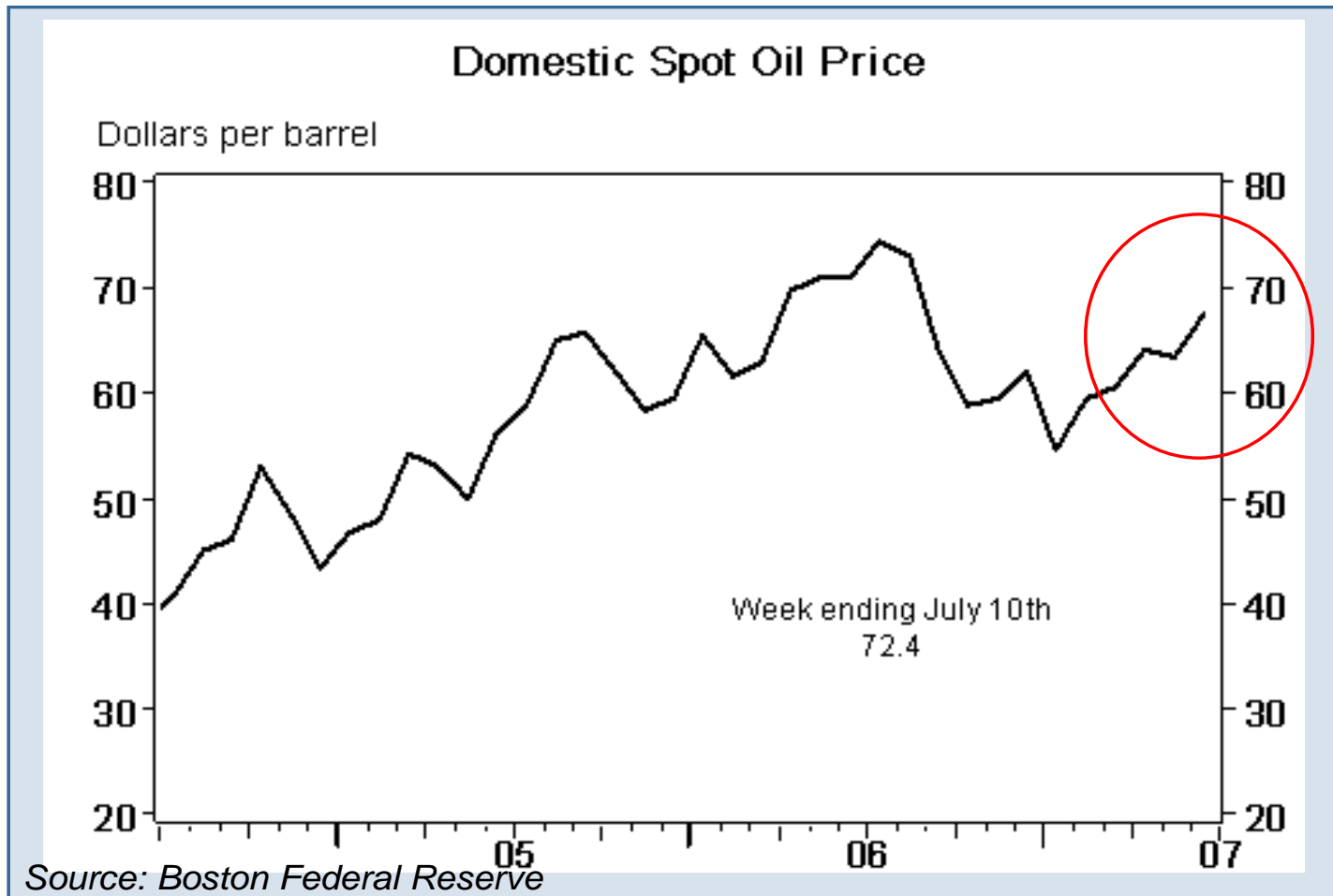
Housing Slump Deepened

Tighter Lending Standards and Higher Interest Rates



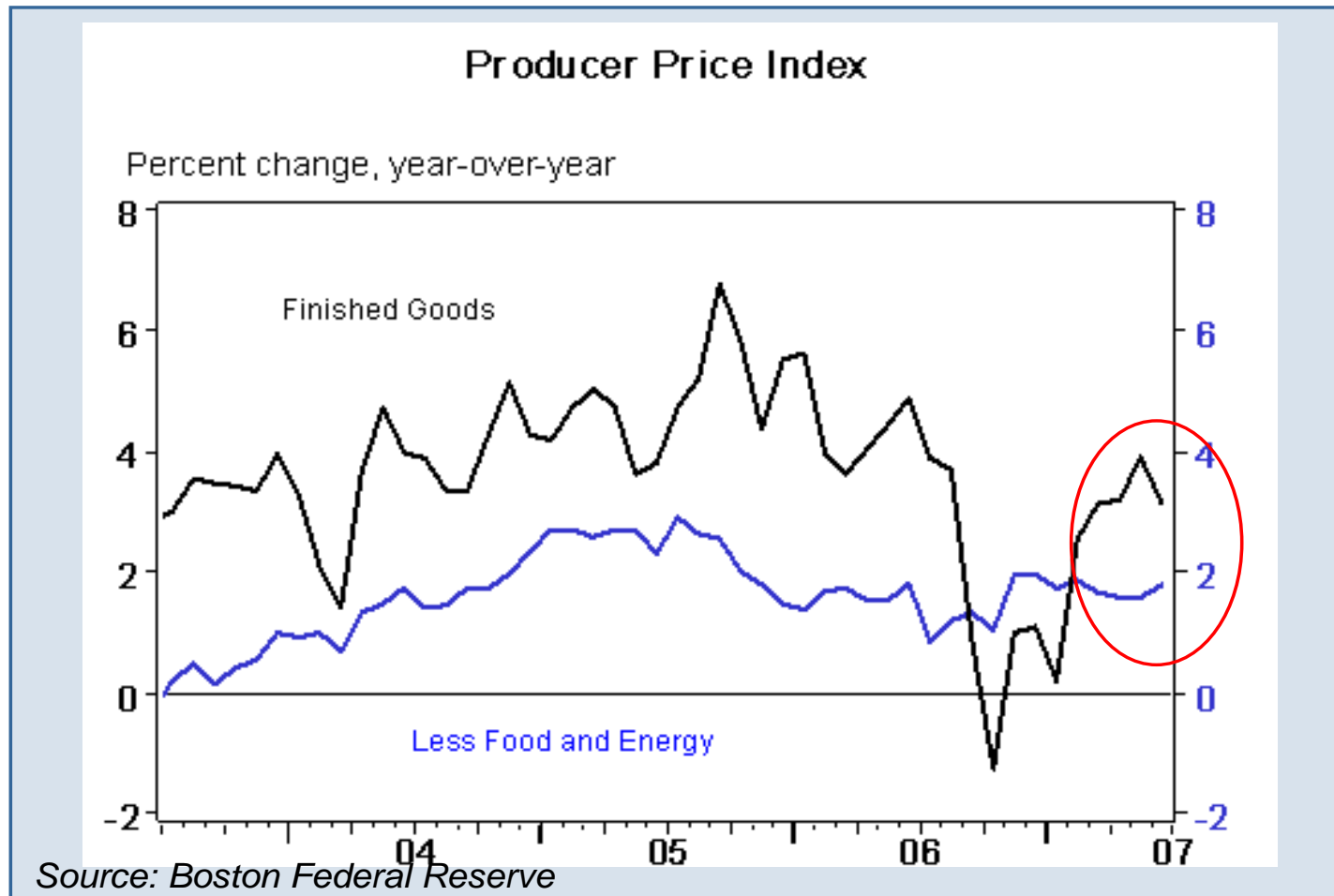
Spot Price for Crude Oil Continues To Rise

Oil Heads Toward \$70/Barrel



No Inflation Pressure

Core Inflation Remains Stable





Securities Markets

Second-Quarter 2007 Highlights

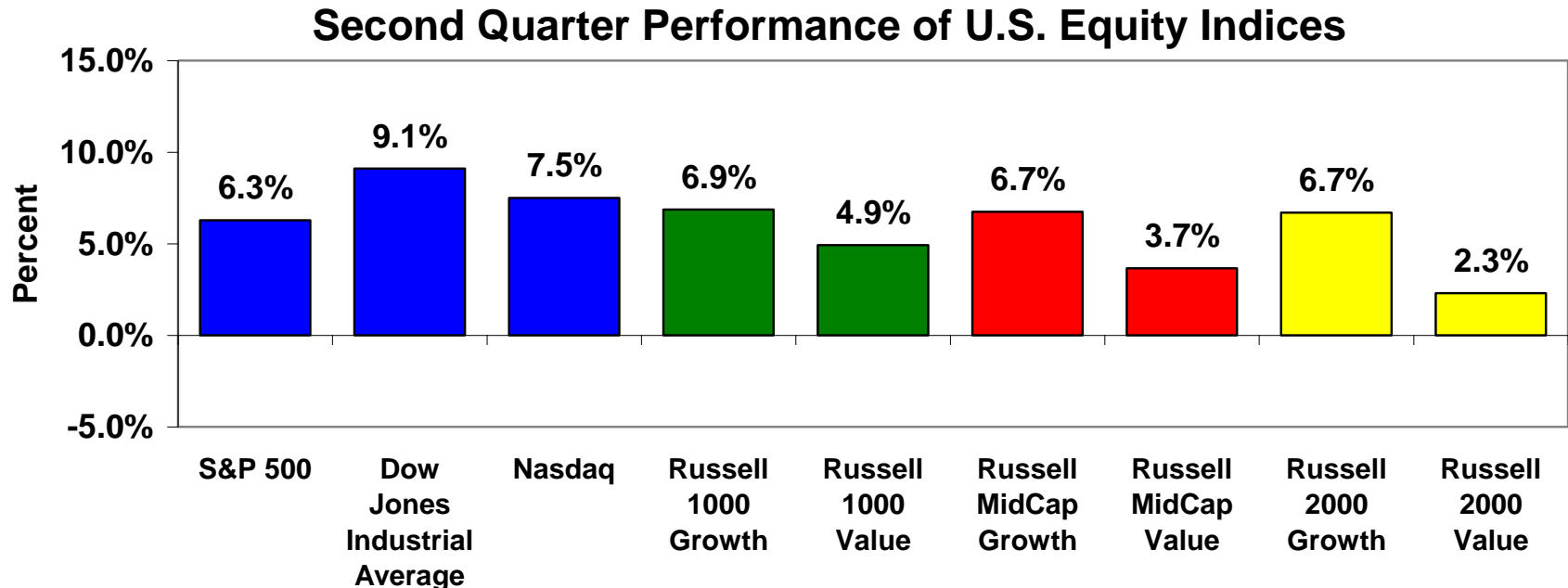
- After strong returns in April and May, concerns over rising bond yields and widening credit spreads hampered performance in June
- International equities posted solid gains, except for Japan
- Emerging markets bounce back; however, returns are still strong across regions
- Bond markets posted second-quarter losses
- Equity REITs plunged during the quarter; poorest showing since the third quarter of 2002
- Hedge funds posted solid gains but lagged public equity market
- Private equity has completed \$1.65 trillion of deals in the second quarter, the largest three-month total in history

U.S. Equity Growth Stocks Outpace Value

June Cools Off Earlier Q2 Gains

Capital Markets: U.S. Equity Market

- High levels of M&A and strong corporate growth supported substantial gains in the U.S. equity market
- Large cap stock outpaced mid- and small-cap issues as leadership shifted to high-quality companies
- Growth stocks outperformed value issues



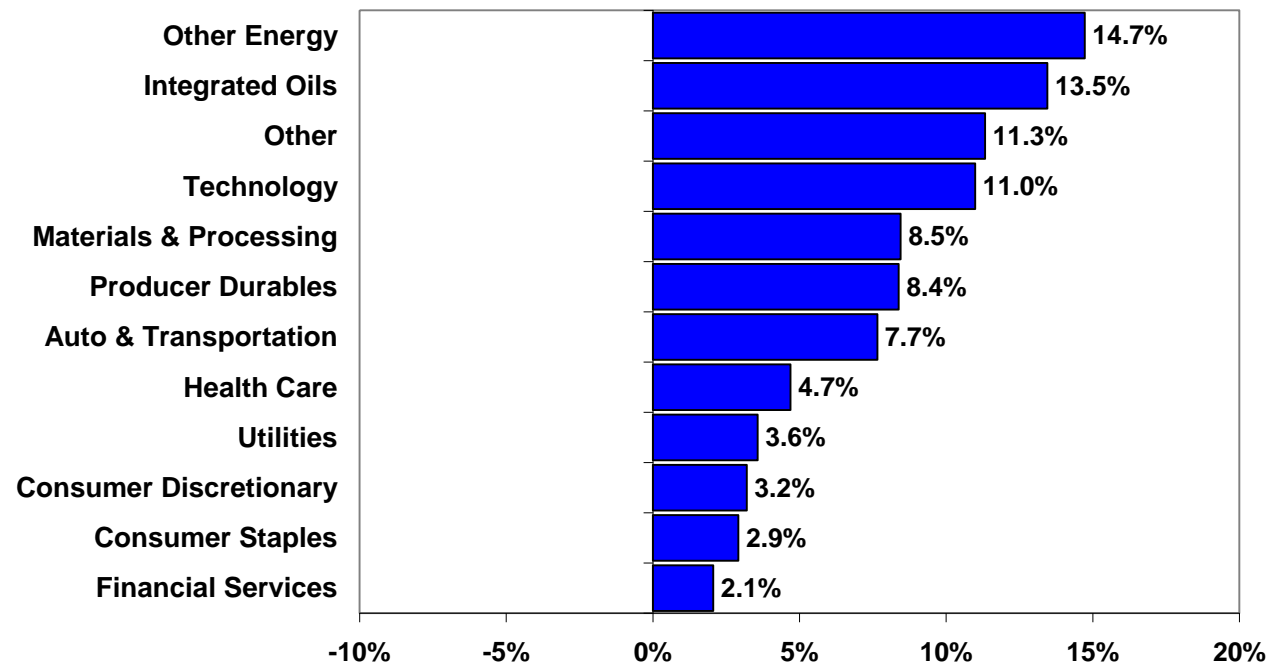
Large Cap Stock Outperformed Small Cap

Energy Sector with Best Performance

Capital Markets: U.S. Large Cap Equity Market

- Benefiting from strong global growth, cyclical stocks outperformed
- Energy issues increased due to supply and demand factors and geopolitical risks
- Consumer and financial stocks lagged due to the subprime mortgage fallout, deteriorating housing market and higher energy prices

Second Quarter Sector Performance - Russell 1000 Index



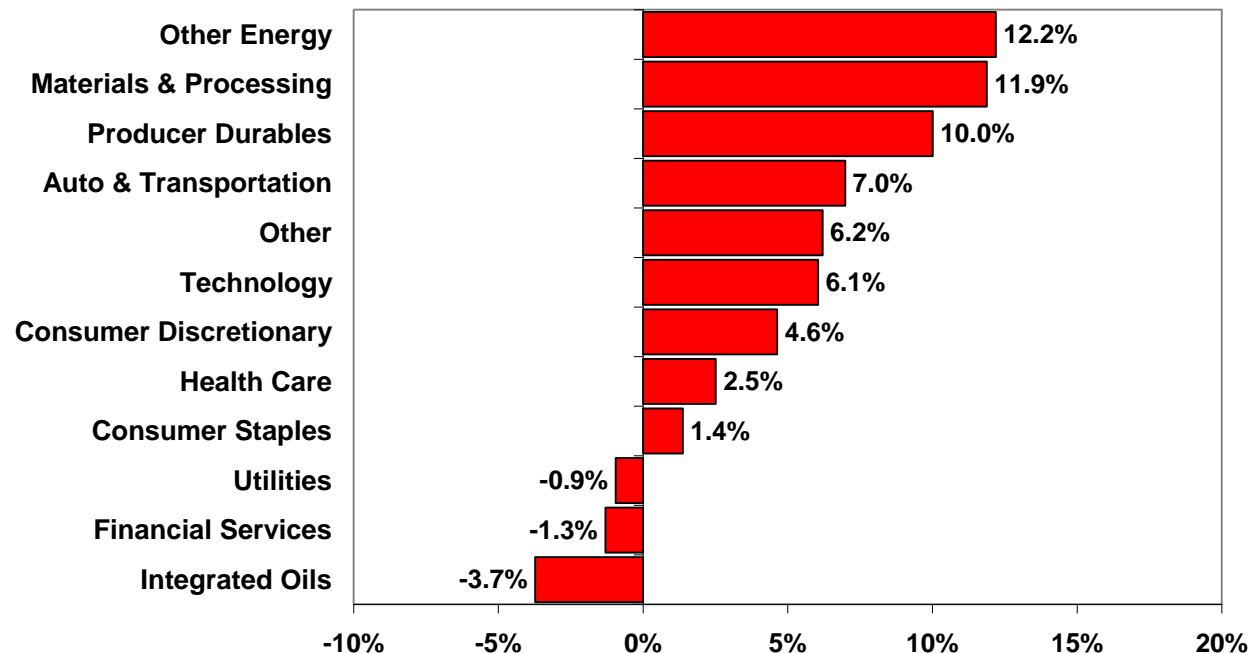
Mixed Results for Small Cap Stocks

Integrated Oil and Financial Services Stocks Again Weak

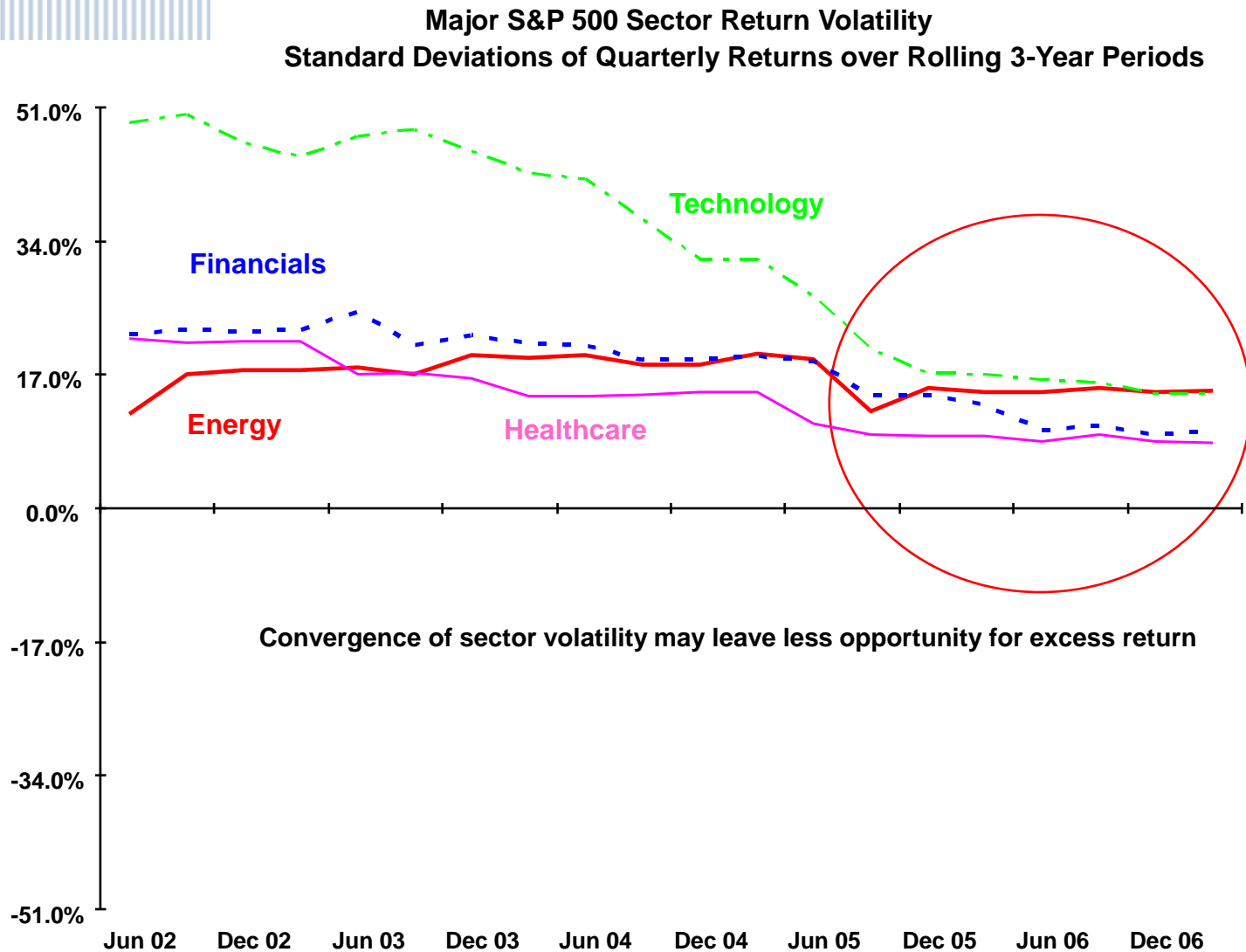
Capital Markets: U.S. Small Cap Equity Market

- Sector performance in small cap stocks differed widely during the period
- As with large cap issues, energy, industrials and materials stocks performed well
- Financials, which represents the largest allocation to the Russell 2000 Index, was negatively impacted by rising yields and subprime woes

Second Quarter Sector Performance - Russell 2000 Index



Domestic Equity



Convergence of sector volatility may leave less opportunity for excess return

Strong Second-Quarter Growth Results

- Growth outperformed value across capitalization range
- Large-cap was strong across all styles
- Small-cap trailed mid- and large-cap

2Q2007	Growth	Core	Value
Large	6.86	5.90	4.93
Mid	6.75	5.30	3.65
Small	6.68	4.41	2.29
Note: Russell 1000, Mid-Cap, 2000 Indices: Growth, Core, Value			

One-Year Returns Far Above Expectations

- Performance convergence across styles and capitalization
- Small-cap lagged mid- and large-cap

1-Year Returns	Growth	Core	Value
Large	19.06	20.46	21.90
Mid	19.75	20.85	22.11
Small	16.82	16.42	16.03
Note: Russell 1000, Mid-Cap, 2000 Indices: Growth, Core, Value			

Three-Year Results Are Strong

- Returns for all asset classes except large growth are well above long-term expectations
- Large growth is gaining momentum

3-Year Returns	Growth	Core	Value
Large	8.71	12.35	15.93
Mid	14.49	17.16	19.31
Small	11.74	13.43	14.99
Note: Russell 1000, Mid-Cap, 2000 Indices: Growth, Core, Value			

Cumulative 3-Year Results Are Generally Strong

- Returns are excellent; however, large growth returns are still moderate
- Mid-cap returns were ahead across all styles

Cumulative 3-Year	Growth	Core	Value
Large	28.47	41.81	55.81
Mid	50.07	60.82	69.84
Small	39.52	45.94	52.05
Note: Russell 1000, Mid-Cap, 2000 Indices: Value, Core, Growth			

Five-Year Results Beginning to Coverage

- Large growth is still lagging
- Mid-cap is superior across all capitalization ranges

5-Year Returns	Growth	Core	Value
Large	9.30	11.34	13.31
Mid	15.46	16.40	17.17
Small	13.07	13.88	14.62
Note: Russell 1000, Mid-Cap, 2000 Indices: Growth, Core, Value			

Cumulative 5-Year Results Still Vary, Depending on Market Segment

- Mid-cap is outperforming small- and large-cap
- Spread between growth and value begins to close

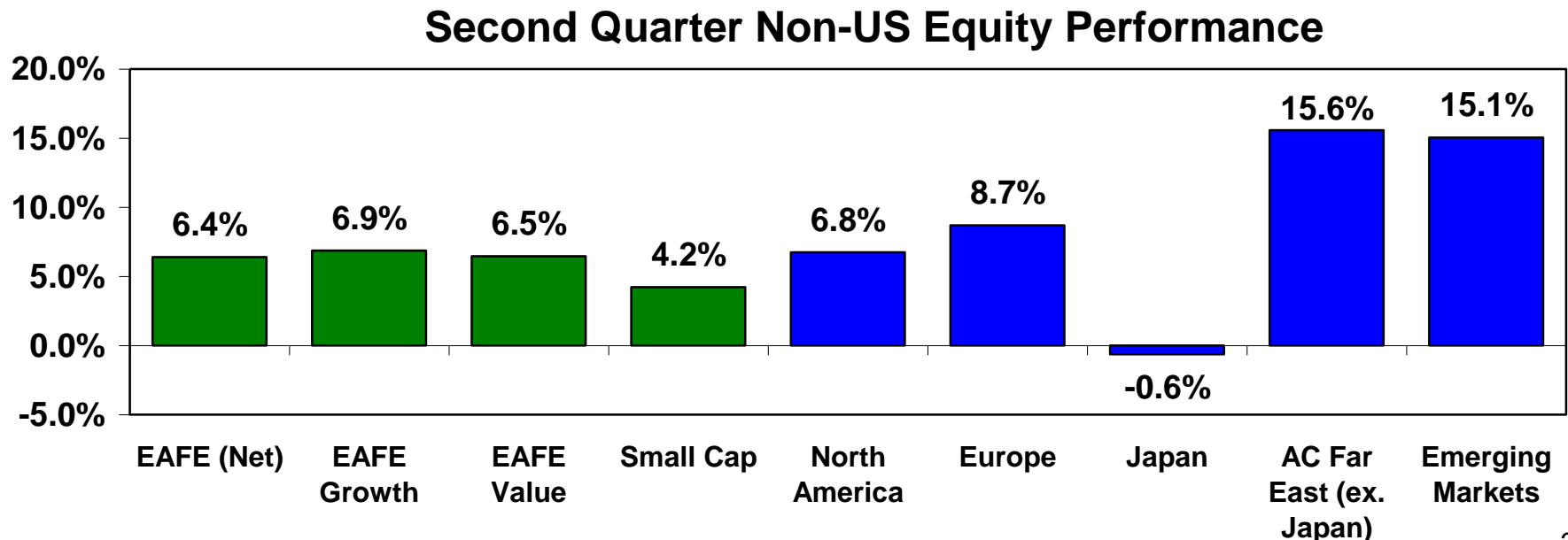
Cumulative 5-Year	Growth	Core	Value
Large	55.99	71.10	86.78
Mid	105.19	113.68	120.84
Small	84.81	91.53	97.83
Note: Russell 1000, Mid-Cap, 2000 Indices: Value, Core, Growth			

Non-U.S. Equities with Solid Gains

Weak Performance in Japan

Capital Markets: Non-U.S. Equity Markets

- Sustained global growth, robust exports and M&A activity continued to benefit non-U.S. equities
- Europe rose 7.0% in local currency terms and benefited from a declining U.S. dollar while Japanese equities were hurt by a depreciating ¥
- Emerging markets rallied as economic expansion was stimulated by infrastructure spending and a declining U.S. dollar



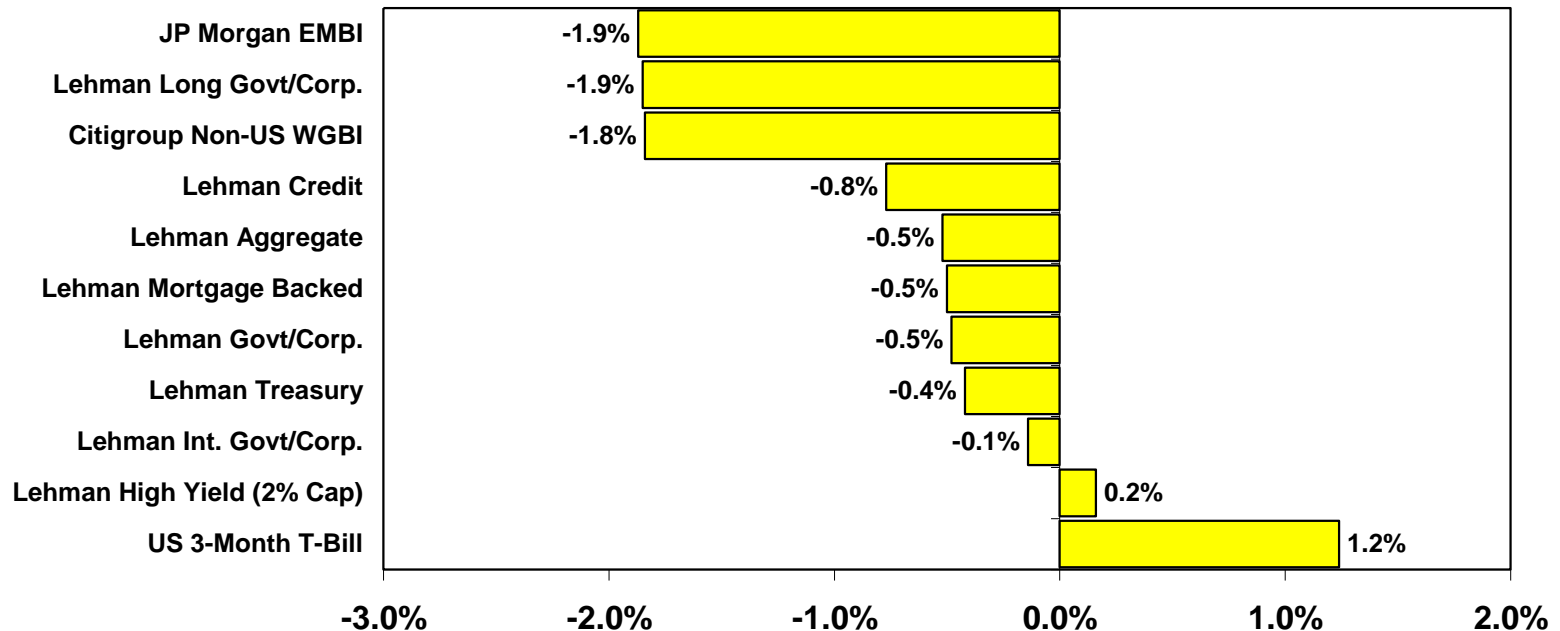
U.S. Fixed Income Posted Modest Losses

Inflation Remains a Concern

Capital Markets: Fixed Income Market

- Bond market retreated amid concerns about strong economic growth and lack of Fed easing, which pushed yields higher
- Credits declined as average corporate spreads widened amid broad credit concerns prompted by subprime loan problems
- Non-U.S. bonds and long-term bonds were among the weakest segments

Second Quarter Fixed Income Performance



Private Equity Fuels Increases in Size and Number of M&A Deals

Capital Markets: Alternatives – Private Equity

■ Private Equity

- Private equity firms raised \$137 billion in 199 funds during the first half of 2007, a 42% increase over the \$96 billion raised in 147 funds during the first half of 2006
- On pace to best the record total, \$261 billion, raised in 2006
- European fundraising was also on a record-setting pace in the first six months, with upswings in almost every category

■ Buyout Funds

- Raised \$108 billion, or 78% of the total, with 8 mega funds raising \$37.4 billion alone
- LPs are growing cautious and focusing more attention on distressed investing

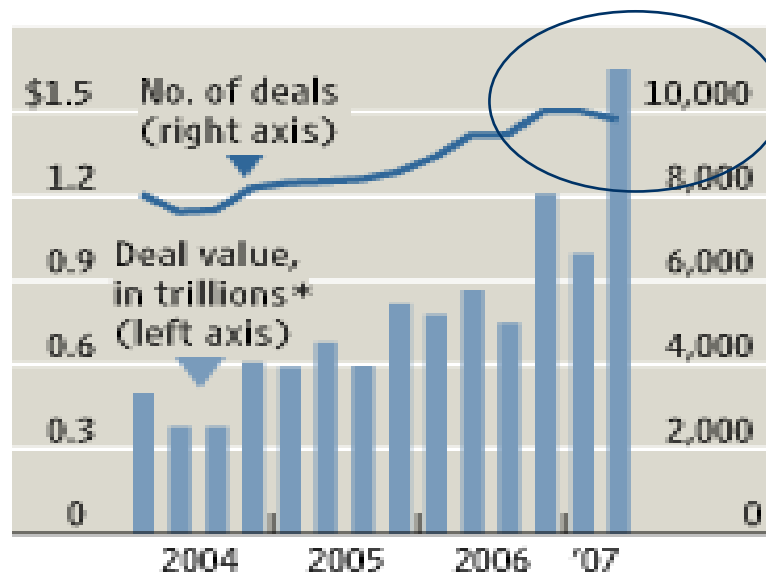
■ Venture Capital Funds

- Capital fundraising activity slowed
- 62 funds raised only \$10 billion in the first half, a 37% drop from the \$15.8 billion raised by 63 venture funds in the first six months of 2006
- Early-stage focused funds made up 53% of fundraising; fewer venture firms raising funds of \$1 billion or larger

Mergers & Acquisitions

Buyout Boom

Quarterly dollar volume of announced global mergers and acquisitions



*includes net debt of target

Source: Thomson Financial

Source: WSJ

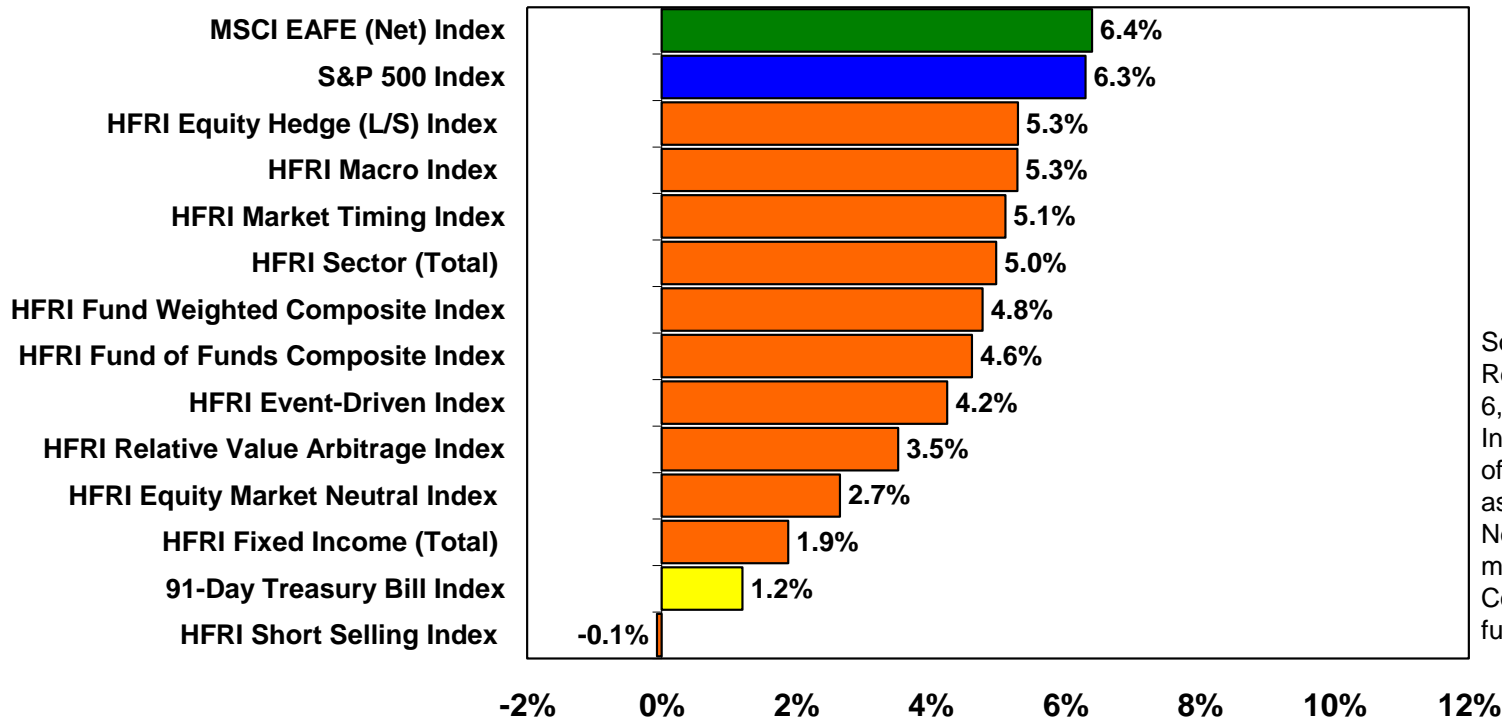
Hedge Funds Post Still-Solid Gains

Concerns About Structured Credit and Subprime Mortgage Market

Capital Markets: Alternatives – Hedge Funds

- Hedge funds had inflows of \$58.7 billion for 2Q07; second-largest quarter on record
- Performance lagged public equity markets for the quarter

Second Quarter Hedge Fund Returns



Source: Hedge Fund Research, Inc. Includes over 6,000+ constituent funds. Includes both domestic and offshore funds. All funds report assets in USD. All funds report Net of All Fees returns on a monthly basis. Weighted Composite Index excludes fund of funds.

Real Estate Correction

REITs Fall on Interest Rates and Valuations

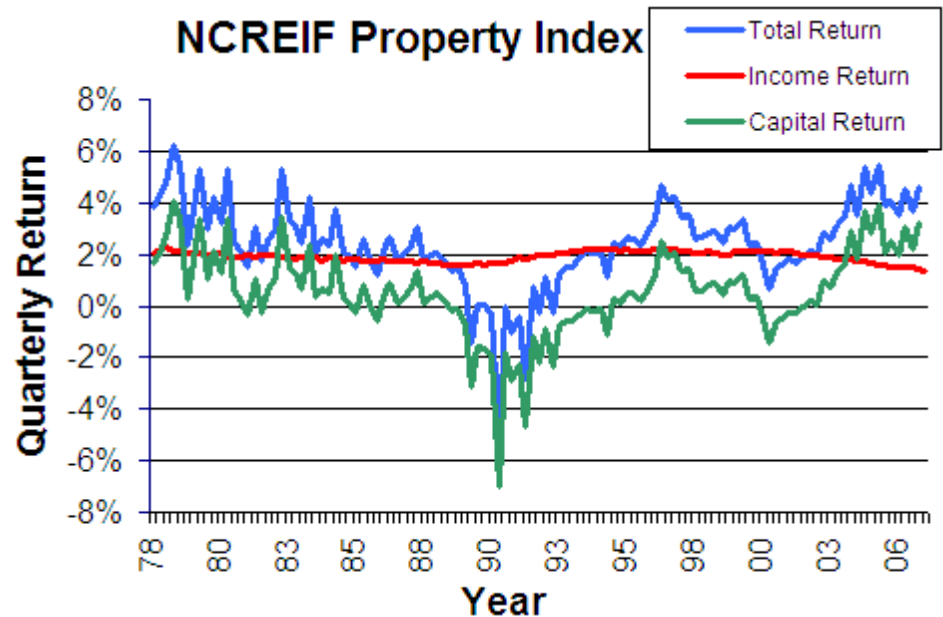
Capital Markets: Alternatives – Real Estate

■ Private Real Estate

- NCREIF Property Index was up 4.6% for the quarter:
 - 3.2% capital appreciation
 - 1.4% income
- Office sector (36.0% of index) strongest sector, returning 5.1%

■ Public Real Estate

- Equity REITs plunged during the quarter, losing 9.0%
- Poorest showing since the third quarter of 2002



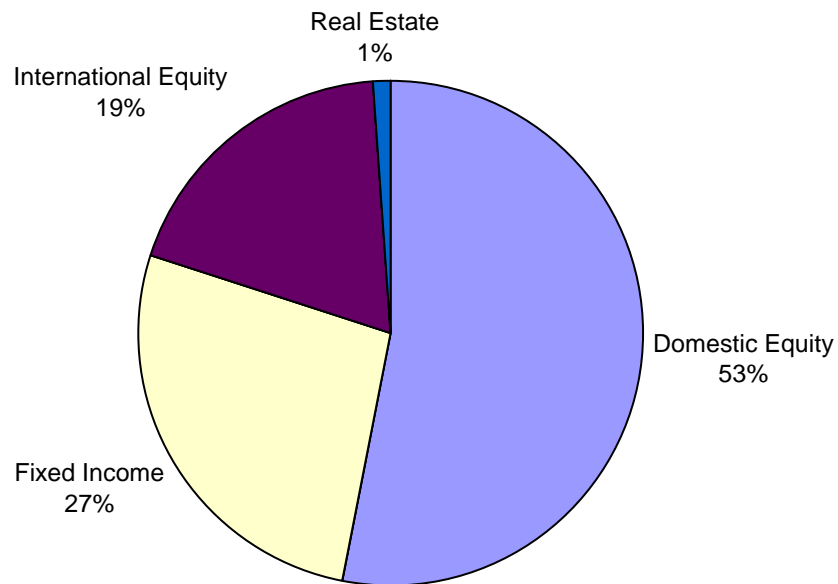


ASRS Total Fund Performance

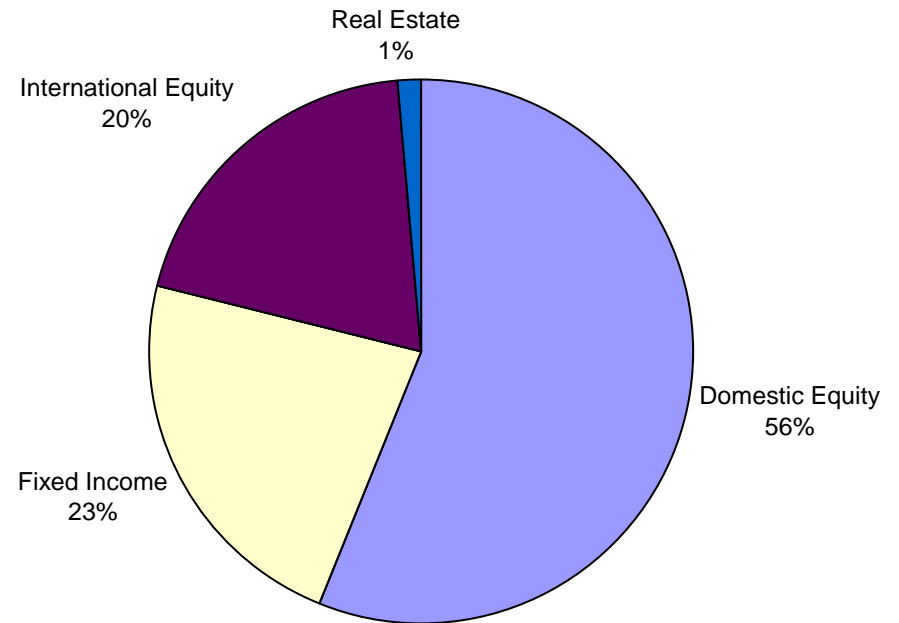
Total Fund Asset Allocation

June 30, 2007

**Policy Adjusted for Transition into
Real Estate and Private Equity**



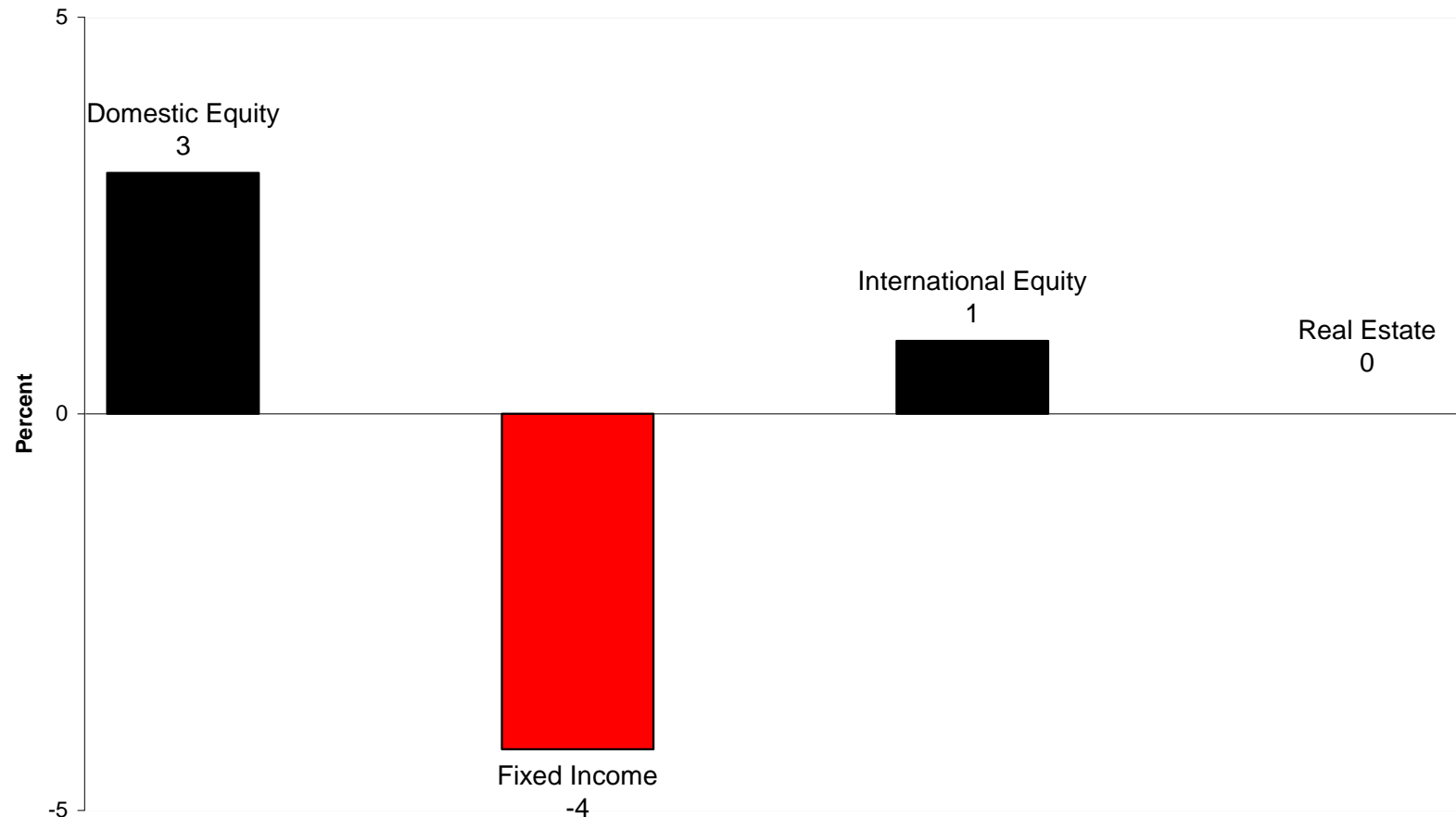
Actual Asset Allocation



Total Fund Asset Allocation

June 30, 2007

Actual Asset Allocation vs. Policy Adjusted for
Transition into Real Estate and Private Equity



Total Fund Performance

For Periods Ending June 30, 2007

	<u>1 Year</u>	<u>3 Years</u>	<u>5 Years</u>	<u>10 Years</u>	<u>Inception</u>
1) ASRS Total Fund	17.8%	11.9%	11.0%	8.4%	11.0%
Benchmark*	18.6%	11.6%	10.5%	7.3%	10.9%
Excess Return	-0.8%	0.3%	0.5%	1.1%	0.1%

* Interim Benchmark (current): 39% S&P 500, 7% S&P 400, 7% S&P 600, 27% LB Aggregate, 19% MSCI ACWI ex US, and 1% NPI+100 bps

Note: Interim Benchmark incorporates a proration of 5% real estate and 5% private equity

Policy History:

- 7/1/75-12/31/79 – 40% S&P 500/60% LB Aggregate
- 1/1/80-12/31/83 – 50% S&P 500/50% LB Aggregate
- 1/1/84-12/31/91 – 60% S&P 500/40% LB Aggregate
- 1/1/92-12/31/94 – 50% S&P 500/40% LB Aggregate/10% EAFE
- 1/1/95-6/30/97 – 45% S&P 500/40% LB Aggregate/15% EAFE
- 7/1/97-12/31/99 – 50% S&P 500/35% LB Aggregate/15% EAFE
- 1/1/00-9/30/03 – 53% S&P 500/30% LB Aggregate/17% EAFE
- 10/1/03-12/31/06 – 53% S&P 500/26% LB Aggregate/15% MSCI EAFE/ACWI ex US⁽¹⁾/6% NPI+100 bps
- 1/1/07-present – 31% S&P 500/7% S&P 400/7% S&P 600/26% LB Aggregate/18% MSCI ACWI ex US/6% NPI+100 bps/5% Russell 3000+300 bps

⁽¹⁾ MSCI EAFE/ACWI ex US Benchmark is the MSCI EAFE prior to 10/1/05 and the MSCI ACWI ex US thereafter

Total Fund Performance

For Periods Ending June 30, 2007

	<u>1 Year</u>	<u>3 Years</u>	<u>5 Years</u>	<u>10 Years</u>	<u>Inception</u>
ASRS Total Fund	17.8%	11.9%	11.0%	8.4%	11.0%
2) Actuarial Assumption	8.0%	8.0%	8.0%	8.0%	7.6%
Excess Return	9.8%	3.9%	3.0%	0.4%	3.4%
3) Asset Allocation Target	7.8%	7.5%	7.7%	8.2%	N/A
Excess Return	10.0%	4.4%	3.3%	0.2%	N/A
4) CPI Inflation + 3.75%	6.4%	6.9%	6.7%	6.4%	7.6%
Wage Inflation + 3.75%	4.6%	7.7%	7.8%	7.1%	8.2%
Excess Return - CPI	11.4%	5.0%	4.3%	2.0%	3.4%
Excess Return - Wage	13.2%	4.2%	3.2%	1.3%	2.8%

Supplemental Comparison Information*

For Periods Ending June 30, 2007

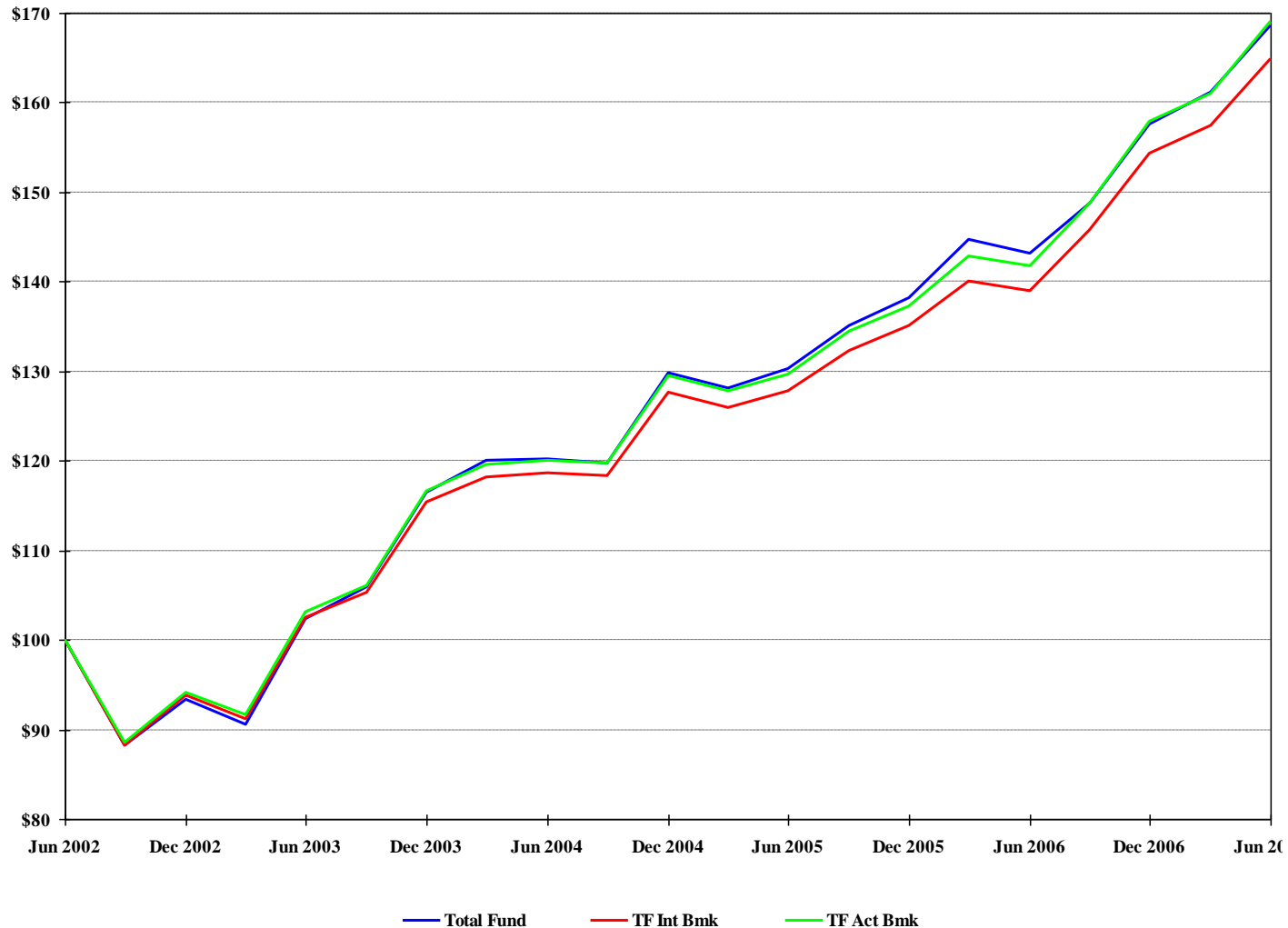
	1 Year	3 Years	5 Years	10 Years	15 Years
Russell/Mellon Trust Universes					
Master Trust Funds - Total Funds	38	56	60	49	48
Master Trust Funds - Billion Dollar Total Funds	53	75	78	61	57
Total Funds - Public	48	76	82	57	36
Total Funds Billion Dollar - Public	55	83	85	66	42
Total Funds - Corporate	31	50	52	40	49
Wilshire Trust Universe Comparison Service					
Master Trusts - All	25	40	41	51	49
Public Funds	26	43	44	44	32
Public Funds Greater than \$1.0 Billion	47	71	71	57	40
Corporate	25	41	41	59	62
Callan Associates Inc.					
Total Funds	30	55	57	47	42
Public Funds	31	63	62	46	23
Public Funds - Large (>1B)	38	86	79	53	24
Corporate Funds	24	50	53	44	47

*The information contain herein is for comparison purposes only and is not a Total Fund performance benchmark. Peer universe comparisons are subject to several limitations, including: peer groups are not comprehensive, several funds are included in multiple peer groups, peer groups are constructed using gross of fees returns, and survivorship bias in that poorly performing funds may no longer continue to report results.

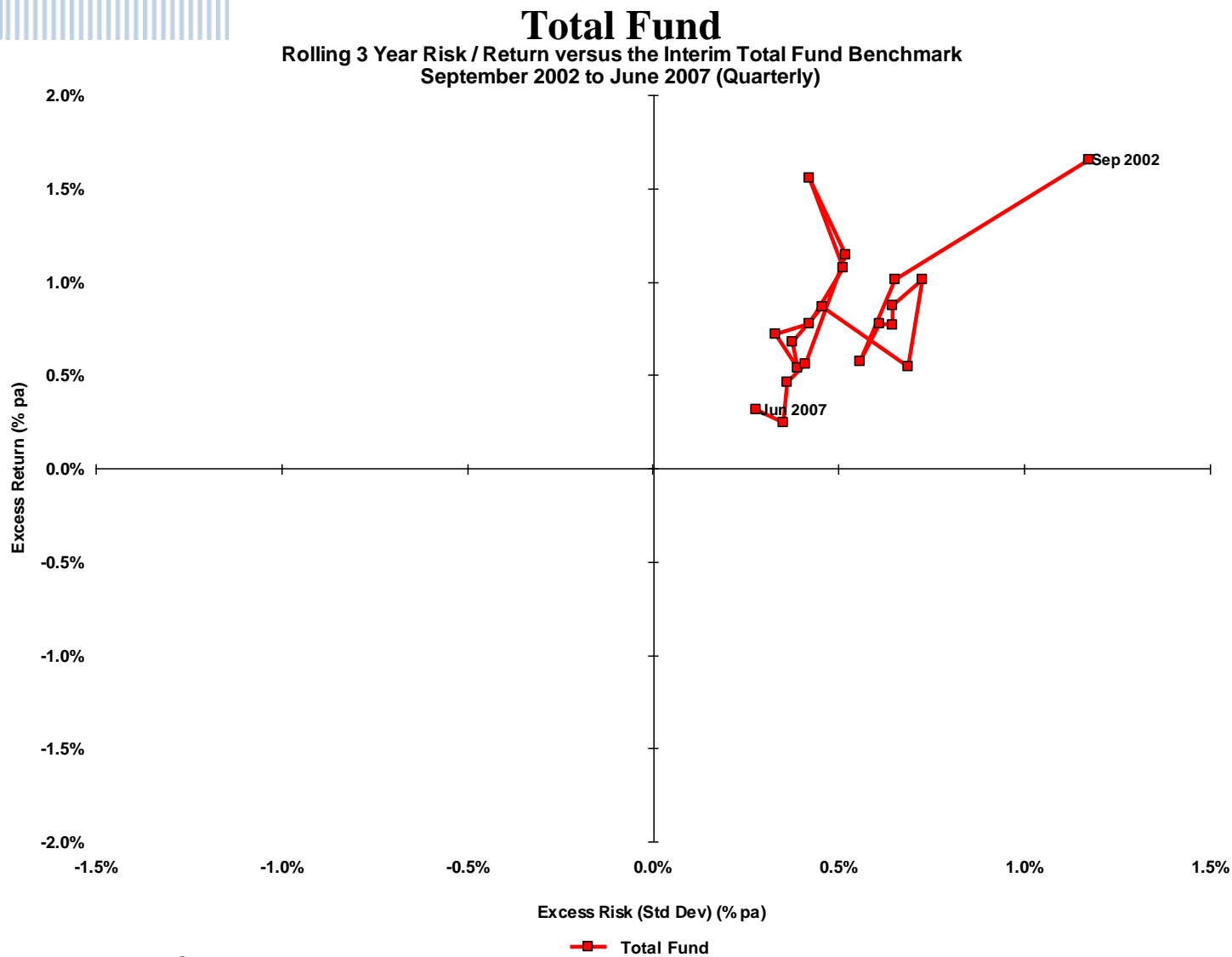
Note: Universes are constructed with gross of fees returns; therefore, the ASRS rank is based on gross of fees returns.

Total Fund Growth

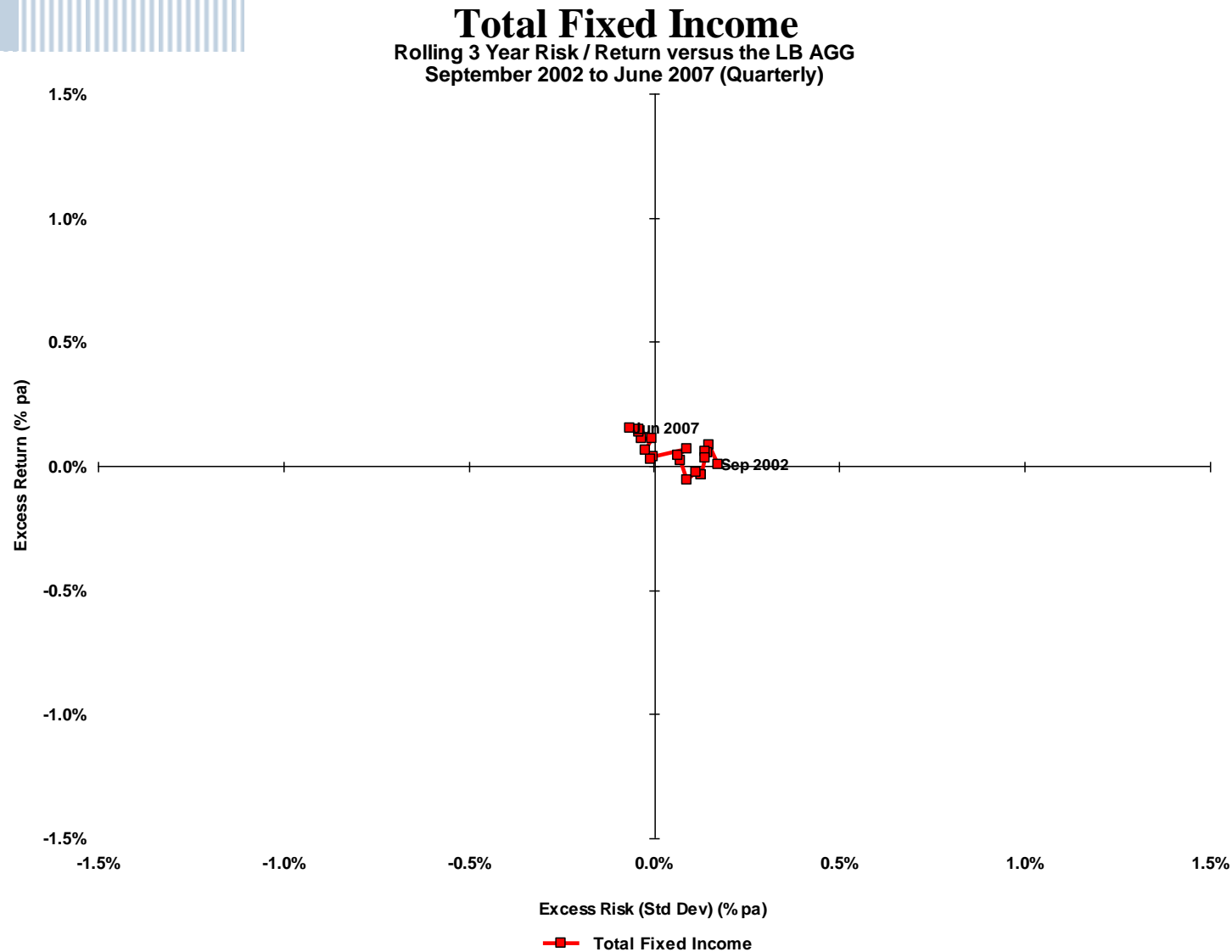
Total Fund
Value of \$100 invested in US Balanced from Jul 2002 to Jun 2007
(before fees)



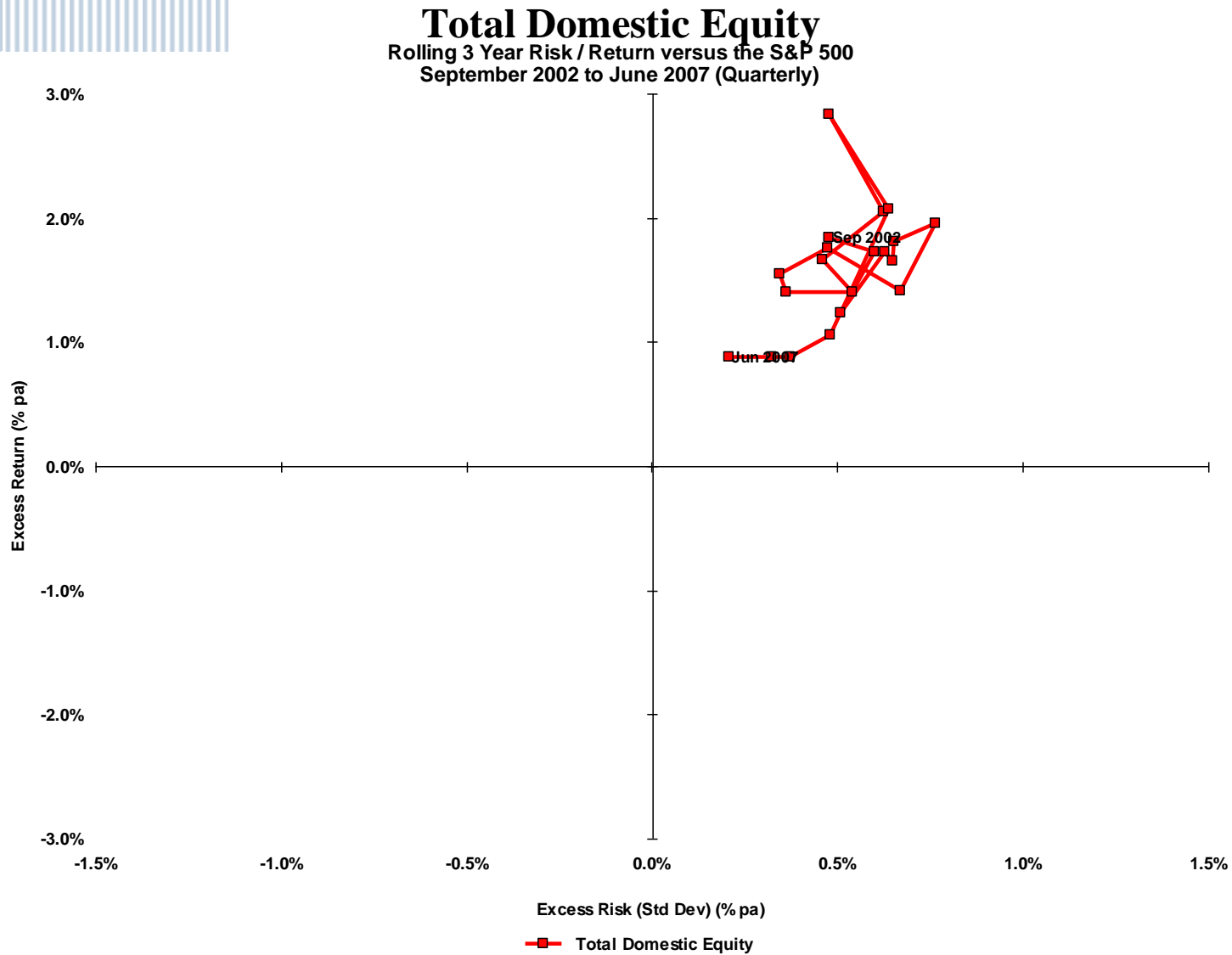
Risk/Return Analysis



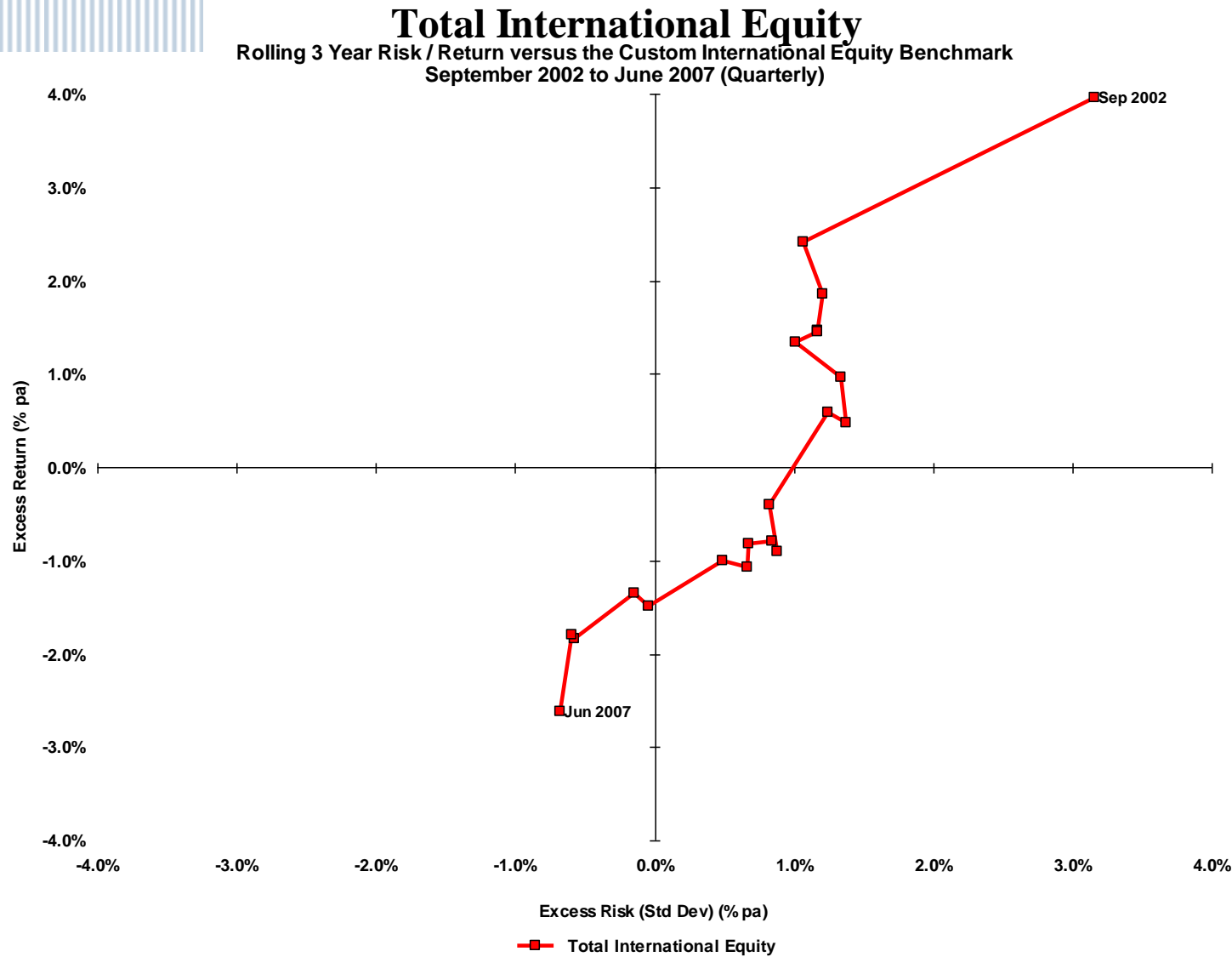
Risk/Return Analysis



Risk/Return Analysis



Risk/Return Analysis



Performance vs. Benchmarks

For the 3 Years Ending June 30, 2007

	<u>Return</u>	<u>Assumed ROR</u>	<u>Std. Dev.</u>
Total Fund	11.9%	7.5%	5.8%
Benchmark ⁽¹⁾	11.6%		5.6%
Domestic Fixed	4.1%	4.6%	3.1%
LB Aggregate	4.0%		3.2%
Domestic Equity	12.6%	8.5%	7.6%
S&P Custom Bmk ⁽²⁾	12.0%		7.4%
Intl. Equity	20.9%	8.6%	10.1%
MSCI Custom Bmk ⁽³⁾	23.5%		10.8%
Real Estate	N/A	-	N/A

⁽¹⁾ Interim Benchmark (current): 39% S&P 500, 7% S&P 400, 7% S&P 600, 27% LB Aggregate, 19% MSCI ACWI ex US, and 1% NPI+100 bps

Note: Interim Benchmark incorporates a proration of 5% real estate and 5% private equity

⁽²⁾ S&P 500 prior to 1/1/07 and 74% S&P 500, 13% S&P 400, 13% S&P 600 thereafter

⁽³⁾ MSCI EAFE/ACWI ex US Benchmark is the MSCI EAFE prior to 10/1/05 and the MSCI ACWI ex US thereafter

Performance vs. Benchmarks

For the 5 Years Ending June 30, 2007

	<u>Return</u>	<u>Assumed ROR</u>	<u>Std. Dev.</u>
Total Fund	11.0%	7.7%	10.4%
Benchmark ⁽¹⁾	10.5%		10.1%
Domestic Fixed	4.6%	4.8%	3.6%
LB Aggregate	4.5%		3.6%
Domestic Equity	11.7%	8.7%	13.9%
S&P Custom Bmk ⁽²⁾	10.9%		13.5%
Intl. Equity	17.2%	8.9%	18.1%
MSCI Custom Bmk ⁽³⁾	18.6%		17.7%
Real Estate	N/A	-	N/A

⁽¹⁾ Interim Benchmark (current): 39% S&P 500, 7% S&P 400, 7% S&P 600, 27% LB Aggregate, 19% MSCI ACWI ex US, and 1% NPI+100 bps

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⁽²⁾ S&P 500 prior to 1/1/07 and 74% S&P 500, 13% S&P 400, 13% S&P 600 thereafter

⁽³⁾ MSCI EAFE/ACWI ex US Benchmark is the MSCI EAFE prior to 10/1/05 and the MSCI ACWI ex US thereafter